

II. *Description of the "Driver" Ants, described in the preceding Article.* By J. O. WESTWOOD, F.L.S., &c.

THE remarkable account of the habits of the Driver ants of tropical Western Africa, contained in the preceding article, by Dr. Savage, is too interesting not to require that the species in question should be entomologically described, so as to be at once identified, and introduced into its place in the family of the ants to which it belongs. Having been requested to draw up a description of the insects sent in great numbers by Dr. Savage, I herewith offer, by way of supplement to his article, the following characters, with the accompanying remarks. A comparative examination of the different individuals was in fact especially necessary, in order to learn the real nature of the different classes, with reference to the question whether the Soldiers among the *Formicidæ* were analogous to the Soldiers among the *Termitidæ*, that is, whether they formed, as in the latter, a distinct class, or whether they were merely neuters, with larger heads than usual.

On carefully examining the specimens which were sent to England in spirits, I found that they varied in length from $1\frac{3}{4}$ to 5 lines, all possessing the same structure not only of thorax, abdomen, legs and antennæ, but also of the maxillæ and labial apparatus. All likewise agreed in the general structure of the head, the only material difference being that the teeth of the mandibles are more developed in the small individuals than in the large ones; that the heads in the latter are comparatively larger; and that in the former there is a more evident carina down the middle of the front of the head. I must confess that I could discover no distinct character to separate the largest individuals from the others; there seemed indeed to be a regular gradation in the size from the largest to the smallest, which the natives appear to consider as females. I thus regard them all as neuter ants, and consider it very unfortunate that we are at present unacquainted with the males and females, or with the larva and pupa state of this interesting insect. These lacunæ will, I trust, be still filled up by Dr. Savage.

But the most curious circumstance which my examination of these insects made evident was, that all the remarkable economy detailed in the preceding memoir is performed by creatures destitute of organs of sight, having been unable to detect the slightest indication of eyes in any of the individuals.

This latter circumstance, in conjunction with the structure of the lower parts of the mouth, and the existence of only eleven joints in the antennæ, at once determines the intimate relation of the Driver ants to my genus *Typhlopone*,* and completely confirms the views which I published both in my Introduction, and in a paper in the sixth volume of the Annals of Natural History, on the Formicoid nature of *Typhlopone*, in opposition to the opinion of Mr. Shuckard, that the latter is the female of a different family; an opinion the more remarkable, when it is remembered that Mr. Shuckard had before him at the same time the interesting genus *Anomma* (described in a previous number of the same Annals), and which, like the Driver ants, is so very closely allied to the genus *Ponera*, one of the species of which is actually described by Latreille as wanting eyes. It will thus be seen that the discovery of the winged individuals of the Driver ants is the more to be desired, as it will enable us at once, and still more satisfactorily, to settle the question of the relations of these insects, as well as, I trust, those of the *Dorylidæ*, which, according to the remarks which Captain Boys has communicated to me, are equally Formicoid.

The Driver ants seem to belong to the genus *Anomma* of Shuckard, above alluded to, so far at least as I am able to judge from external characters, the unique specimen of *A. Burmeisteri* being preserved in the British Museum, where the dissection of the mouth of unique individuals is not permitted. The new species may be thus described.

Anomma arcens, Westw.

Neutr. Nigra, subnitida; antennis (articulo basali excepto), coxis, geniculis, tarsisque piceis; capite plus minusve oblongo-quadrato, in individuis maximis postice magis angusto, margine postico emarginato; clypeo, inter basin antennarum, bicarinato; antennis in impressionibus duabus insertis, 11-articulatis; oculis obsoletis; mandibulis elongatis, gracilibus, falcatis, ante medium dente majori alteroque pone medium plus minusve distincto, interstitio serrato; maxillis lobis duobus apicalibus, externo ad apicem setoso; palpis maxillaribus brevissimis, et, ut videtur, 3-articulatis; labio magno carnoso striato, palpis labialibus longitudine labii 2-articulatis, thorace e segmentis duobus longitudine æqualibus constanti, prothorace infæro, lateribus dilatatis tamen supra visis; meso-

* Compare the figures at the foot of Plate I. with those in the upper part of Plate II., in the sixth volume of the Annals and Magazine of Natural History.

thorace antice latiore, metathorace parum compresso utrinque spiracula instructo, apice recte truncata; abdominis pedunculo elongato utrinque versus basin tuberculo minuto instructo; segmento sequenti pedunculo latiori semi-ovali, reliquis parum constrictis.

Long. corp. lin. $1\frac{3}{4}$ —5.

Habitat in Africa occidentali tropicali. D. Savage.

DESCRIPTION OF THE FIGURES.

Plate I. fig. 3. One of the Soldiers, rather larger than the insect; 3*a*, *b*, *c*, *d*, the heads of four of the different sized individuals; 3*e*, maxilla; 3*f*, instrumenta labialia. The lines indicate the natural length of different individuals.

III. *Descriptions of two new Goliath Beetles from Cape Palmas, in the Collection of the Rev. F. W. Hope. By J. O. WESTWOOD, F.L.S., &c.*

THE selection of characters of evidently minor importance—which have been well termed artificial ones—for the discrimination of groups, whether of high or low rank,—which seem to afford very satisfactory results in our distribution of species or genera, becomes more and more difficult in proportion to the increase of our knowledge of the species of such groups. Taking, for example, those African Goliath beetles which have the prothorax broadest behind, with a simple terminal lobe to the maxillæ, and long fore legs, in the males; we have *artificially* defined one group as distinguished by having the fore legs externally dentated, and the upper surface of the body velvety; and a second as having the fore tibiæ not externally dentated, and the upper surface of the body (in the tropical species) brilliantly polished.

Within a very short time, however, Mr. Hope has received from Dr. Savage, who has indefatigably assisted in forwarding our knowledge of these interesting insects, two new species which disturb these previous arrangements. In one of these insects we have a velvety upper surface, combined with the externally simple fore tibiæ of the males, (although it is true that they exhibit a tendency to become toothed,) whilst the horn of the head is still further analogous to that of several of the males of the second of these two groups. The other species agrees more decidedly with the first of these two groups, in its velvety upper surface, and externally tridentate male tibiæ; but the general appearance of the insect, its comparatively small size, the form of the horn of the